

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended): A miniature analytical device with thermal regulation comprising:
~~a localized heat source; and~~
~~a first an array of temperature-controlled zones comprising reactants[[],]; and~~
~~an array of heat sources, wherein said localized the array of heat source sources is positioned to correspond to the array of temperature-controlled zones and regulates temperature in [[said]] the zones.~~
2. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, wherein:
~~said localized the array of heat source comprising a second array of sources comprises electromagnetic radiation emitters, wherein a second array of electromagnetic radiation emitters is positioned to correspond with said first array of temperature-controlled zones.~~
3. (Currently amended): A miniature analytical device with thermal regulation according to claim 2, wherein:
~~said second array of the electromagnetic radiation emitters comprising comprise~~ vertical cavity surface emitting laser light sources.

4. (Currently amended): A miniature analytical device with thermal regulation according to claim 3, wherein:
~~said second array of electromagnetic radiation emitters transmits the vertical cavity surface emitting laser light sources transmit~~ infrared light through the reactants, thereby facilitating measuring to measure the concentration of a material within [[said]] the reactants.
5. (Currently amended): A miniature analytical device with thermal regulation according to claim 3, wherein:
~~said second array of electromagnetic radiation emitters transmits the vertical cavity surface emitting laser light sources transmit~~ infrared light through the reactants, thereby facilitating measuring to measure the temperature of the reactants.
6. (Currently amended): A miniature analytical device with thermal regulation according to claim [[1]] 2, wherein:
~~said second array of the electromagnetic radiation emitters comprises with comprise~~ at least one light source chosen from a vertical cavity surface emitting laser light source, a light emitting diode, an infrared lamp, an infrared laser, and an infrared diode laser, ~~said first array positioned to correspond with said second array.~~
7. (Currently amended): A miniature analytical device with thermal regulation according to claim 6, wherein:
at least one of ~~said light source~~ the electromagnetic radiation emitters in

~~said second~~ the array of heat sources generates infrared light of a different wavelength.

8. (Currently amended): A miniature analytical device with thermal regulation according to claim 6, wherein:

~~[[said]] the at least one light sources generate~~ source generates infrared light with a wavelength of at least 0.775 micrometers.

9. (Currently amended): A miniature analytical device with thermal regulation according to claim 6, wherein:

~~[[said]] the at least one light sources generate~~ source generates infrared light with a wavelength of at most 7000 micrometers.

10. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, wherein:

~~said localized~~ the array of heat source sources comprises a ~~second array of~~ internal heat generators, wherein ~~said second array of internal heat~~ ~~generators is positioned within said first array of temperature controlled~~ ~~zones.~~

11. (Currently amended): A miniature analytical device with thermal regulation according to claim 10, wherein:

~~[[said]] the~~ internal heat generators comprise ~~[[of]]~~ at least one electrical heater chosen from resistive heaters, inductive heaters, and Peltier heaters.

12. (Currently amended): A miniature analytical device with thermal regulation according to claim 11, further comprising:

~~a third an array of electrical leads positioned to correspond with said second array of to the internal heat generators.~~

13. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, wherein:
~~said localized the array of heat source sources comprises a second array of external heaters, wherein said second array of external heaters is positioned to correspond with said first array of temperature controlled zones.~~
14. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, further comprising:
a power supply coupled to ~~said localized the array of heat source sources~~ providing sufficient drive current to increase the temperature of ~~said temperature controlled the zones.~~
15. (Currently amended): A miniature analytical device with thermal regulation according to claim 14, further comprising:
a controller coupled to ~~[[said]] the~~ power supply for controlling the drive current to ~~said localized the array of heat sources.~~
16. (Currently amended): A miniature analytical device with thermal regulation according to claim 15, wherein:
~~[[said]] the controller modulates the power supply based on a temperature measured from the temperature controlled zones.~~
17. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, further comprising:

~~a third an array of temperature monitors, said third wherein the array of temperature monitors is positioned to correspond to said first the array of temperature controlled zones.~~

18. (Currently amended): A miniature analytical device with thermal regulation according to claim 1, wherein:

~~[[said]] the reactants comprise assay elements for body fluid analysis.~~

19. (Currently amended): A method of thermal regulation for a miniature analytical device comprising:

heating ~~a first an array of temperature-controlled zones containing reactants with a localized heat source;~~

measuring the temperature of ~~[[said]] the temperature controlled zones;~~

modulating ~~[[said]] the localized heat source; [[and]]~~

regulating the temperature of ~~[[said]] the temperature controlled zones; and~~

~~modifying at least one absorptive property of at least one of the reactants.~~

20. (Canceled)